W80-4 LIFE EXTENSION PROGRAM

The W80-4 Life Extension Program will ensure the effectiveness of the bomber leg of the nuclear triad when coupled with the Air Force's Long Range Standoff Cruise Missile.

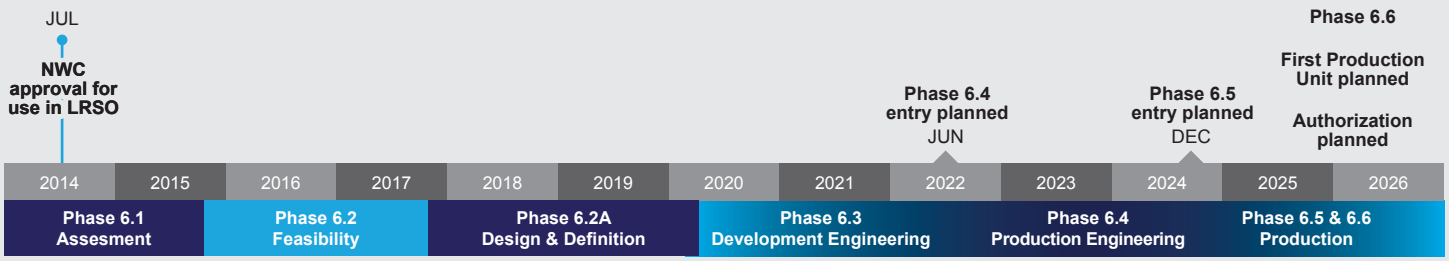
OVERVIEW

In close coordination with the Department of Defense, NNSA is extending the life of the W80-1 warhead through the W80-4 Life Extension Program (LEP) for use in the U.S. Air Force's (USAF) Long Range Standoff (LRSO) weapon. Together, the W80-4 and LRSO will help ensure the long-term effectiveness of the bomber leg of the Nation's nuclear triad against more sophisticated defenses. The W80-4 LEP will also enhance the warhead's safety, security, and reliability.

Key design requirements of the W80-4 include use of the existing insensitive high explosive design, incorporation of modern components and safety features, extensive use of non-nuclear component technology developed for other LEPs, and parallel engineering with the U.S. Air Force on the warhead-missile interface.

ACCOMPLISHMENTS AND CURRENT STATUS

NNSA completed the Weapon Design and Cost Report for the W80-4 LEP in December 2018. The Nuclear Weapons Council (NWC) approved the transition to Phase 6.3, Development Engineering, in February 2019. USAF's early down select to a single LRSO contractor is enabling an earlier powered flight test that reduces risk to the W80-4 program by informing the System Baseline Design Review. The earlier powered flight test reduces the risk of late discovery issues driven by the missile powered flight environment.



NNSA is a semi-autonomous agency within the U.S. Department of Energy responsible for enhancing national security through the military application of nuclear science.

FUTURE MILESTONES

- Plans to enter Phase 6.4, Production Engineering, in FY 2023.
- Is expected to be completed by FY 2031.

NNSA NUCLEAR SECURITY ENTERPRISE ROLES

Lawrence Livermore National Laboratory and **Sandia National Laboratories** are the design and engineering labs for the W80-4 LEP. In addition, Sandia is responsible for production of custom electronics, including neutron generators.

Additional production activities are performed at the following sites:

- **Kansas City National Security Campus** is responsible for producing the major non-nuclear component assemblies, including firing, safing, and use control components.
- **Los Alamos National Laboratory** is responsible for production of detonators and other classified components.
- **Pantex Plant** is responsible for producing high explosives, requalifying the W80-1 pit, and final assembly of the warhead for delivery to the U.S. Air Force.
- **Savannah River Site** is responsible for testing, evaluating, and replenishing the gas transfer system.
- **Y-12 National Security Complex** is responsible for the manufacture of uranium components.

The current air-launched weapon, introduced in 1982